

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: LILY POND	Lake Area (ha):	33.79
Town: SOMERSWORTH	Maximum depth (m):	2.4
County: Strafford	Mean depth (m):	1.3
River Basin: Coastal	Volume (m <sup>3</sup> ):	441500
Latitude: 43°16'14" N	Relative depth:	0.4
Longitude: 70°53'46" W	Shore configuration:	1.00
Elevation (ft): 196	Areal water load (m/yr):	1.74
Shore length (m): 1800	Flushing rate (yr <sup>-1</sup> ):	1.30
Watershed area (ha): 121.9	P retention coeff.:	0.83
% watershed ponded: 0.0	Lake type:	natural

BIOLOGICAL:

3 February 1999

30 June 1998

DOM. PHYTOPLANKTON (% TOTAL)	#1	NO WINTER PLANKTON	DINOBRYON 60%
	#2	ANALYZED	MALLOMONAS 10%
	#3		RHIZOOLENIA 8%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			15.44
DOM. ZOOPLANKTON (% TOTAL)	#1		KELICOTTIA 44%
	#2		KERATELLA 42%
	#3		
ROTIFERS/LITER			1518
MICROCRUSTACEA/LITER			113
ZOOPLANKTON ABUNDANCE (#/L)			1631
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			1.2
BOTTOM DISSOLVED OXYGEN (mg/L)		9.5	0.6
BACTERIA (E. coli, #/100 ml)	#1		3
	#2		3
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None  
Hypolimnion volume (m<sup>3</sup>): None  
Anoxic volume (m<sup>3</sup>) : 58400

**CHEMICAL:**

Lake: LILY POND

Town: SOMERSWORTH

	3 February 1999		30 June 1998		
DEPTH (m)	1.0		1.5		
pH (units)	6.3		6.4		
A.N.C. (Alkalinity)	9.3		5.7		
NITRATE NITROGEN	0.25		< 0.05		
TOTAL KJELDAHL NITROGEN	0.40		0.60		
TOTAL PHOSPHORUS	0.006		0.018		
CONDUCTIVITY ( $\mu$ mhos/cm)	165.1				
APPARENT COLOR (cpu)	90		150		
MAGNESIUM			0.85		
CALCIUM			3.7		
SODIUM			17.8		
POTASSIUM			0.63		
CHLORIDE	5		31		
SULFATE	3		4		
TN : TP	108		33		
CALCITE SATURATION INDEX			3.6		

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 1998**

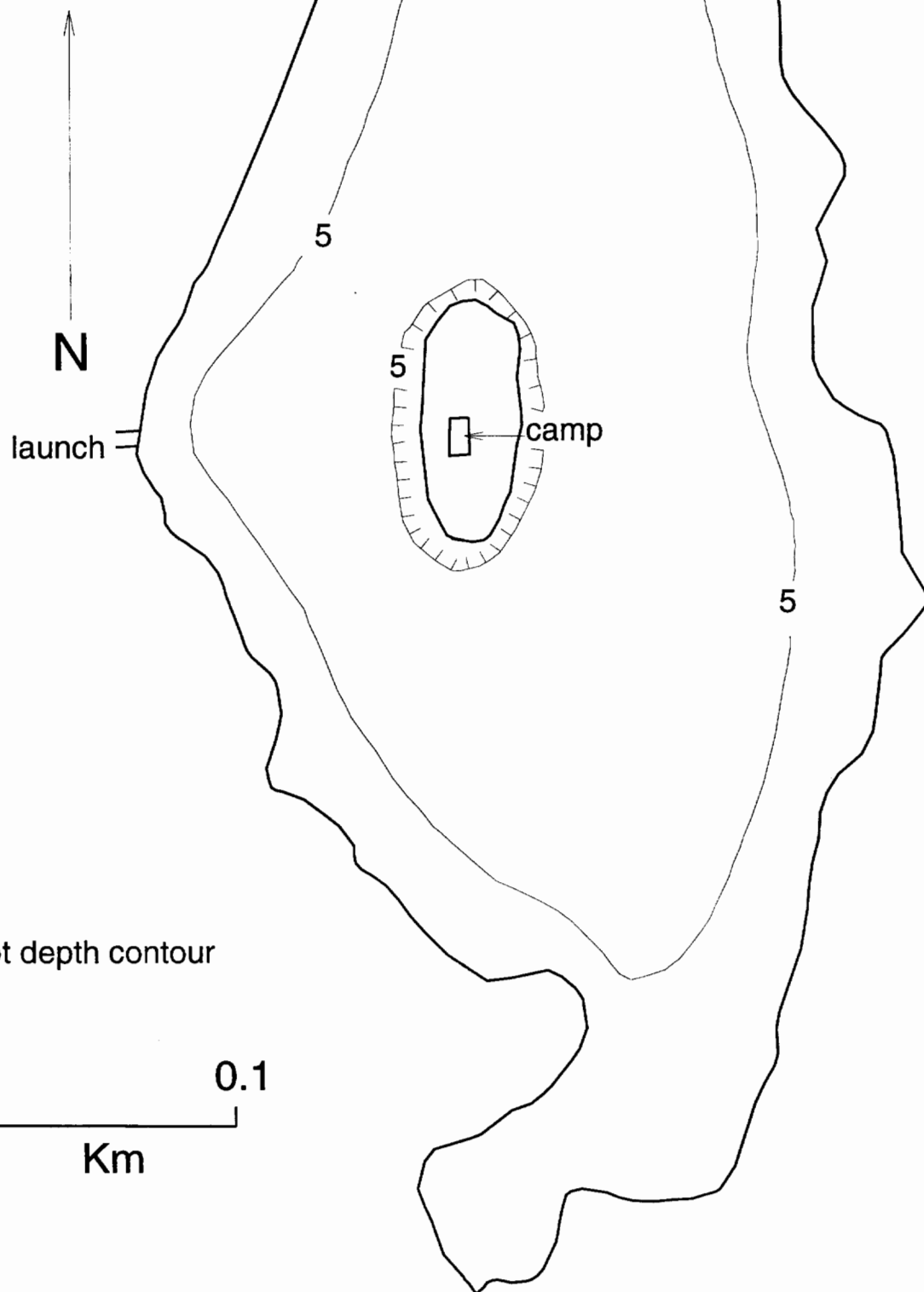
D.O. S.D. PLANT CHL TOTAL CLASS

**	4	3	3	10	Eutro.
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**COMMENTS:**

1. aka Coles Pond.
2. Lily Pond was previously surveyed and classified in 1987. It was sampled earlier in 1998 (June vs August) and went from mesotrophic to eutrophic. The chlorophyll doubled (7 to 15 mg/m<sup>3</sup>) between the two dates (although there was no increase in the phosphorus concentrations), and a dissolved oxygen deficit was found at the very bottom depth in 1998 (not in 1987). More frequent sampling is required to determine if this is a trend or natural year-to-year or seasonal fluctuation.
3. This is a very dark tea-colored pond with high levels of sodium, chloride and conductivity, suggesting road salt runoff.
4. Shoreline is 80% developed with new, second tier construction underway at the northwest shore.
5. No public access; launched boat over private property.

Lily Pond  
Somersworth



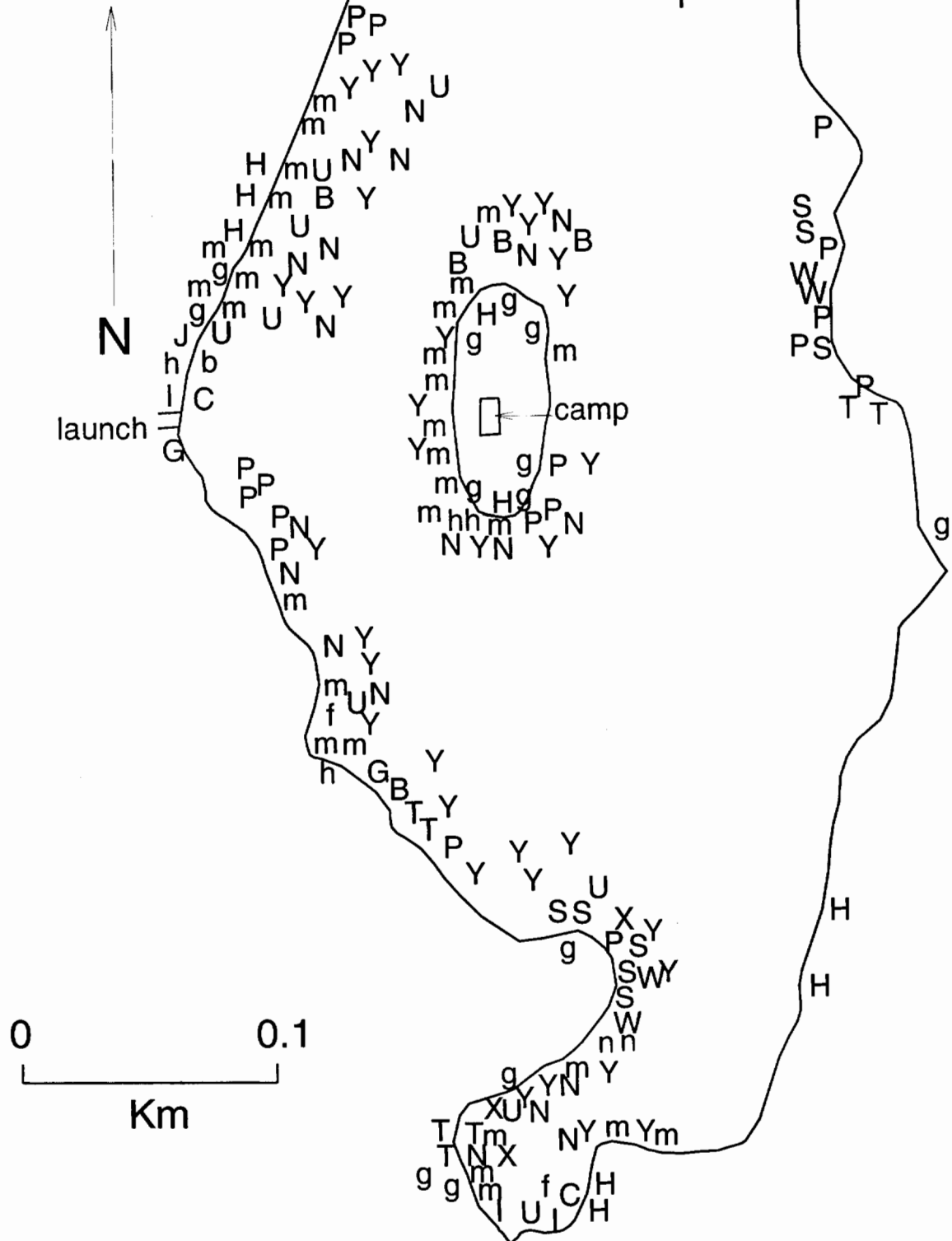
5 foot depth contour

0 0.1  
Km

III-82

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Lily Pond  
Somersworth



# AQUATIC PLANT SURVEY

LAKE: LILY POND

TOWN: SOMERSWORTH

DATE: 06/30/1998

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
f		Filamentous algae	Sparse
B	Brasenia schreberi	Water shield	Sparse
W	Potamogeton nodosus	Pondweed	Sparse
V	Scirpus validus	Softstem bulrush	Sparse
n	Potamogeton natans	Floating-leaf pondweed	Sparse
T	Typha	Cattail	Sparse
Y	Nuphar	Yellow water lily	Common
P	Pontederia cordata	Pickernelweed	Common
C	Carex	Sedge	Sparse
g	Myrica gale	Sweet gale	Common
J	Juncus	Rush	Scattered
b	Scirpus	Bulrush	Sparse
h	Hypericum	St. John's-wort	Sparse
G	Gramineae	Grass family	Sparse
m	Polygonum	Smartweed	Common
U	Utricularia	Bladderwort	Common
H	Vaccinium corymbosum	High-bush blueberry	Common
N	Nymphaea	White water lily	Common
K	Ceratophyllum demersum	Coontail	Sparse
S	Sparganium	Bur reed	Sparse
X		Sterile thread-like leaf	Sparse
I	Spongilla	Freshwater sponge	Sparse
E	Eleocharis	Spike rush	Sparse

**OVERALL ABUNDANCE: Common**

## GENERAL OBSERVATIONS:

1. Plants were sparse along the eastern shoreline, common to abundant along the western shoreline and island, and abundant in the north and south coves.
2. A wetland was located at the northern end, dominated by cattails and pickernelweed.
3. High-bush blueberries and sweet gale were along most of the shoreline (including the island), but generally out of the water.